

KNOWINK, LLC POLLPAD PLUS Version 1.0

Apple iPad, Generation 5
iOS, Version 11.2.6
PollPad Plus Application, Version 1.0
Star Micronics Printer, Model TSP650
ePulse, Version 1.3
Novatel Wireless Access Point, Model SA 2100-V

Staff Report

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I. <u>INTRODUCTION</u>

1. Scope

This report presents the test results for all phases of the certification test of the KNOWINK PollPad Plus, Version 1.0. The purpose of the testing is to test the compliance of the electronic poll book with California laws. Testing also uncovers other findings, which do not constitute non-compliance, and those findings are reported to the electronic poll book vendor to address the issues procedurally. The procedures for mitigating any additional findings are made to the documentation, specifically the KNOWINK PollPad Plus Use Procedures.

2. Summary of the Application

KNOWiNK submitted an application for the PollPad Plus system on January 30, 2017. The system is comprised of the following major components:

- Apple iPad, Generation 5
- iOS, Version 11.2.6
- PollPad Plus Application, Version 1.0
- Star Micronics Printer, Model TSP650
- ePulse, Version 1.3
- Novatel Wireless Access Point, Model SA 2100-V

In addition to these major components, which includes the executable code and the source code, KNOWiNK was required to submit the following: 1) the technical documentation package (TDP); 2) all the hardware components to field two complete working versions of the system, including all peripheral devices, one for the Functional Test Phase and one for the Security and Telecommunications Penetration Test Phase; 3) all the peripherals that would be in the polling place; and 4) the KNOWiNK PollPad Plus Use Procedures.

3. Contracting and Consulting

Upon receipt of a complete application, the Secretary of State released a Request for Quote (RFQ) for assistance with the software, security and telecommunications and accessibility testing. The statement of work (SOW) also had an option for the Secretary of State to use the awarded contractor for additional software, security and telecommunications and accessibility testing, if it deemed necessary.

Through the formal California contracting process, the Secretary of State awarded a contract to SLI Compliance.

II. SUMMARY OF THE SYSTEM

The system consists of six (6) components:

1. Apple iPad, Generation 5

The iPad 5 is 9.4 inches (240 mm) tall, 6.6 inches (169.5 mm) wide, 0.29 inches (7.5 mm) thin, and weighs in at 1.03 pounds (469 grams). It comes with 32GB of storage capacity. The display has the retina density of 2048x1536 pixels at 264 pixels-per-inch (ppi). Inside the iPad is an Apple A9 system-on-a-chip (SoC) with integrated M9 motion co-processor and 2 GB of RAM. The device is also Wi-Fi (802.11a/b/g/n/ac), dual band (2.4GHz and 5GHz), HT80 with MIMO and Bluetooth 4.2 technology compliant.

2. iOS, Version 11.2.6

iOS (formerly iPhone OS) is a mobile operating system created and developed by Apple Inc. exclusively for its hardware. It is the operating system that presently powers many of the company's mobile devices, including the iPhone, iPad, and iPod Touch. Major versions of iOS are released annually.

3. PollPad Plus Application, Version 1.0

The PollPad Plus solution provides an electronic voter check-in and verification process for election authorities. PollPad Plus is an Apple iPad application requiring no appendages for operation. The PollPad Plus application has the capability to process voters in approximately 35 to 40 second. The application also provides built-in election management tools, reporting tools and customizable workflows.

4. Star Micronics Printer, Model TSP650

Star Micronics' TSP650 receipt printer is offered with a variety of interface options including Serial, Parallel, USB, Ethernet, WLAN, and the iOS compatible Bluetooth printer. The TSP650 provides a print speed of 60 receipts per minute and features an improved guillotine auto-cutter, and easy "drop-in & print" paper loading.

5. ePulse, Version 1.3

ePulse is a web-based monitoring platform. It connects polling places to the designated centralized location and facilitates communication between administrators and poll workers. ePulse is an election day management tool that connects poll books, enables documentation and trouble resolution, and provides secure voter data management and poll worker supervision. The advanced election management tools on ePulse provide polling place status, voter information, hardware health, and customizable reports on a full range of election metrics.

6. Novatel Wireless Access Point, Model SA 2100-V

Novatel Wireless' SA 2100-V has multiple mounting options and connectivity interfaces for machine to machine applications. The device provides auto-switching between internal and external antennas to provide options for performance. The SA 2100-V also provides connectivity to 4G LTE and 3G networks.

III. TESTING INFORMATION AND RESULTS

1. Background

KNOWiNK submitted an application to the Secretary of State for certification of the KNOWiNK PollPad Plus, Version 1.0 on January 30, 2017.

State examination and functional testing of this system was conducted by Secretary of State Staff in conjunction with the State's technical consultant SLI Compliance. The configuration of the equipment was conducted at the Secretary of State's office in Sacramento, California on March 19, 2018. Functional testing was performed by Secretary of State Staff from March 19 to March 23, 2018 (Phase I), and April 16 to April 18, 2018 (Phase II). Volume testing was conducted by Secretary of State Staff from April 24, 2018, through April 25, 2018. Source Code Review, Security and Telecommunications Testing and Accessibility Testing were performed by SLI Compliance from April 9 to May 11, 2018.

2. Functional Testing Summary

Functional examination and review was conducted as if the California Secretary of State were a jurisdiction that just purchased KNOWiNK's PollPad Plus system. KNOWiNK's PollPad Plus Use Procedures documentation was executed to install all hardware and software per the vendor's instruction. All electronic poll book functions to be utilized by a jurisdiction were exercised.

Functional Testing Phase I

Phase I of Functional Testing began on March 19, 2018, and proceeded through March 23, 2018. KNOWiNK provided two electronic poll books (5th Generation I-Pad with iOS version 11.2.6 and the KNOWiNK PollPad Plus application), access to the KNOWiNK Precinct Central Console website, two printers (Star Micronics TSP650) and one Novatel SA 2100-V Wireless Access Point for functional testing.

For approximately three days, Secretary of State Staff exercised the functionality of the electronic poll book according to the vendor provided technical documentation. The exercises included verification of expected functions of the system as outlined in the vendor provided technical documentation, execution of test cases and verification of the electronic poll books compliance with State statutes and regulations. A KNOWiNK representative was present for Phase I of Functional Testing.

Issues & Observations:

During Phase I, approximately nineteen (19) issues were identified. All nineteen (19) issues required mitigation.

a. Documentation

Twelve (12) issues were related to minor documentation discrepancies and were provided to KNOWiNK for modification. The documentation was subsequently modified and the changes verified by Secretary of State Staff.

b. Hardware

One (1) issue was related to the hardware and was provided to KNOWiNK for mitigation. The mitigation was implemented and verified by Secretary of State Staff.

The PollPad Plus application was uninstalled and reinstalled. The device was unable to connect to the Novatel Wireless Access Point after reinstallation of the application. The name of the iPad was changed in the iPad settings and the MiFi SSID name was changed and the issue was remedied. The PollPad Plus application was uninstalled and reinstalled a total of 3 additional times and the issue did not persist.

c. Software

Five (5) issues were related to the software and were provided to KNOWiNK for mitigation. The mitigations were implemented and verified by Secretary of State Staff.

The PollPad Plus application had the capability to store a voter's California driver's license number, and Social Security Number or portion thereof. This data is provided to the PollPad Plus application during the import of the voter file from the jurisdictions election management system. Per California Code of Regulations section 20150(2), electronic poll books shall not contain a voters (a) California driver's license number, or (b) Social Security Number or portion thereof. This was mitigated by excluding the California driver's license number and Social Security Number during the voter file import from the jurisdiction's election management system.

The PollPad Plus application had the capability to process same day voter registration (conditional voter registration). This functionality requires a California driver's license number and/or the last four numbers of a voter's Social Security Number be provided and input into the PollPad Plus. Per California Code of Regulations section 20150(2), electronic poll books shall not contain a voters (a) California driver's license number, or (b) Social Security Number or portion thereof. This was mitigated by disabling the PollPad Plus' "Add Voter (conditional voter registration)" functionality.

All iPad operating system (iOS) settings (e.g., updates, date and time, WiFi, etc.) were accessible and capable of manipulation. This was mitigated by setting the device in Guided Access Mode. Guided Access restricts the iOS device to the PollPad Plus application.

The PollPad Plus application does not require a user specific username and password be entered when accessing the application. This was mitigated by adjusting the iPad settings to require a password anytime the iPad is accessed. However, user specific usernames and passwords are not available for the PollPad Plus application.

The PollPad Plus application has the capability to connect to a smart card encoder to facilitate ballot on demand printing from the PollPad Plus. Per

California Code of Regulations section 20158(a), the electronic poll book shall not be connected to a voting system at any time. This was mitigated by disabling the PollPad Plus' "Voting System (Encoder)" functionality.

The PollPad Plus application only has the capability to display the English and French languages. KNOWiNK is currently working to include additional language functionality to their system and will incorporate the added functionality in the next system version.

Functional Testing Phase II

Phase II of Functional Testing began on April 17, 2018, and proceeded through April 18, 2018. KNOWiNK provided mitigations to the issues and observations identified within Phase I of Functional Testing. For approximately two days, Secretary of State Staff exercised and confirmed the functionality of the mitigations to the issues and observations identified within Phase I of Functional Testing.

Issues & Observations:

During Phase II, mitigations to issues identified in Phase I were exercised and confirmed. Five (5) additional issues were identified during Phase II. All five (5) issues required mitigation.

a. Documentation

Five (5) issues were related to minor documentation discrepancies, which were given to KNOWiNK for modification. The documentation was subsequently modified and the changes verified by Secretary of State Staff.

b. Hardware

There were no issues related to the hardware.

c. Software

There were no issues related to the software.

3. Software Review Testing Summary

SLI Compliance performed a review of the PollPad Plus source code. During the testing, SLI conducted a Security and Integrity review of the iOS/Swift source code, a Vulnerability review of the iOS/Swift source code, a Security and Integrity review of the Ruby on Rails source code, and a Vulnerability review of the Ruby on Rails source code. The discrepancies and vendor mitigations/responses are listed in the following table:

Table 3A: Security and Integrity Review of iOS/Swift Source Code		
Discrepancy	Vendor Mitigation/Response	
	This is referencing a piece of code that allowed	
	the user to reset and clear the device logs. The	
A delete function is accessible.	ability to execute this code however, has been	
A defete function is accessible.	removed from the application. There is	
	currently no way for the user to delete the logs.	
	No code has been changed around this finding.	

Table 3B: Vulnerability Review of iOS/Swift Source Code		
Discrepancy	Vendor Mitigation/Response	
A potential memory leak condition was found.	A deallocate to the code to prevent this issue will be added in the next system version via administrative approval.	
Reuse of generic error messages could leave the code vulnerable to malicious code without the ability to accurately diagnose and record issues that arise.	The error associated with the server response is included in the Error Log and console output in debugging. From a client application perspective we need to handle code 400 responses and the error.localized description functions to determine the error and the Error Log (Log.error) serves to track it. Errors are also sent to the debugger when debugging to further find and diagnose problems from code 400 responses.	
The software has the ability to delete log files and that activity is not itself logged.	This is referencing a piece of code that allowed the user to reset and clear the device logs. The ability to execute this code however, has been removed from the application. There is currently no way for the user to delete the logs. No code has been changed around this finding.	
Case statements should utilize default path in all cases.	In Swift, this is not required unless you do not wish to implement an entire enum. It is bad practice for switch statements based upon enums constructs to do so unless explicitly needed as the complier will not warn you of missing cases when you add new ones to the enum type you are switching on. It is unnecessary if you do fulfill all cases, which the compiler will force you to do without a "default." "Default" cases largely breed bugs unless for explicit reasons. In places where the	

	compiler cannot guarantee all case patterns (switch are pattern matchers in Swift, not just usable by number based enumeration constructs), "default" case is required by the compiler to even compile.
Improper use of Controller-View-Model	The Poll Pad application uses VIPER
programming structure, potential for	programming structure, not MVC. The
inadvertent data loss.	application follows industry standard.
Severe errors should log (not display) trace	FatalError calls are logged to device output by
back for forensic purposes (e.g.	default on iOS, same as fatal errors thrown
i.backtrace.inspect) for all fatal conditions.	from the system.

Table 3C: Security and Integrity Review of Ruby on Rails Source Code		
Discrepancy	Vendor Mitigation/Response	
There is an inconsistency in the party listings between objects.	There are two different party systems that are used for two distinct applications, one for the KNOWiNK encoder application and one for the parties used on PollPad. The parties are required to be different since encoder parties are different than KNOWiNK's. This functionality is used for the Diebold/Global voting system which is not used in California.	
There are some instances where error handling is not unique to the error or misspelled.	The error message is the same because it is for the same error. There are two places to assign an email to a user: when creating a new one or when updating an existing one. Either way the same check and error message occurs.	
File/Database open errors are not being checked and leave the possibility for the data to be corrupted or lost.	Critical file open/closes are checked, and failures are retried by our queue/worker system.	

Table 3D: Vulnerability Review of Ruby on Rails Source Code		
Discrepancy	Vendor Mitigation/Response	
The use of sidekiq and sideqit to handle data queues has the potential for stack overflow if not managed properly.	We are unaware of any issues resulting from use of Sidekiq and Redis with regards to an overflow attack. Since both are third party products, we will update them to the latest version to make sure we have all required security patches in the next version of the system via administrative approval.	
Four instances of Re-use of Generic Error	Re-used error messages are generally for the	
messages could leave the code vulnerable to	same activity, but from different access points	
malicious errors were found.	(i.e. creating a record vs. modifying a record).	

4. Security and Telecommunications Testing

SLI Compliance performed Security and Telecommunications testing on the PollPad Plus. During the testing, SLI conducted a physical security review, logical security review, physical telecommunications review and a logical telecommunications review. The discrepancies and vendor mitigations/responses are listed in the following table:

Table 4A: Physical Security Review	
Discrepancy	Vendor Mitigation/Response
No findings or vulnerabilities were located.	N/A

Table 4B: Logical Security Review		
Note: The following discrepancies pertain to KNOWiNK's ePulse web-based monitoring		
platform and were considered of minimal overall impact to the overall security of the		
KNOWiNK PollPad Plus 1.0 solution by SLI as all discrepancies would require Election		
Official insider or Vendor insider access.		
Discrepancy	Vendor Mitigation/Response	
	The line in question is used for sort/filtering	
Cross-Site Scripting (DOM-Based)	tables. While the Javascript does pull arguments	
Cross-Site Scripting (DOM-Based)	out of the hash, those are cleaned by the server	
	and matched against defined cases.	
	KNOWiNK will enable the secure flag for all	
SSL Cookie Without Secure Flag Set	cookies in the next system version via	
	administrative approval.	
	This will be remediated in the next version of	
Cross-Site Scripting (Reflected)	the software with administrative approval by	
Cross-site scripting (Refrected)	removing the link to the referrer and instead	
	providing a static link back to a known page.	
	Areas where the window location or query is	
Open Redirection (DOM-Based)	used are all sanitized by the server prior to	
	processing.	
	KNOWiNK will add the autocomplete="off"	
	attribute to all passwords in the next version of	
Password Field with Autocomplete Enabled	the system via an administrative approval. This	
	will disable all password programs from	
	remembering passwords.	
	This code snippet came from internal jQuery	
	source code. We will upgrade to the latest	
Link Manipulation (DOM-based)	version of the library to make sure any	
Elik Mainpalation (BOM based)	necessary security fixes have been applied in	
	the next version of the system via	
	administrative approval.	
	This page (copy poll workers) has a back link	
	on it that is the source of potential injection.	
Client-Side HTTP Parameter Pollution	This will be remediated by removing the link to	
(Reflected)	the referrer and instead provide a static link	
	back to a known page in the next system	
	version via administrative approval.	
Strict Transport Security	KNOWiNK will enable HSTS to remediate this	

issue. This will be completed in the next
version of the system via administrative
approval.

Table 4C: Physical Telecommunications Review		
Discrepancy	Vendor Mitigation/Response	
No findings or vulnerabilities were located.	N/A	

Table 4D: Logical Telecommunications Review		
Discrepancy	Vendor Mitigation/Response	
No findings or vulnerabilities were located.	N/A	

5. Volume Testing Summary

Volume Testing began on April 24, 2018, and proceeded through April 25, 2018. For approximately two days, Secretary of State Staff processed 250 mock voters on the PollPad Plus system. No unexpected results or issues were encountered during the Volume test.

6. Accessibility

SLI evaluated the PollPad Plus against the applicable portions of the Web Content Accessibility Guidelines (WCAG) 2.0 and Section 508 of the Rehabilitation Act of 1973 for compliance. The discrepancies and vendor mitigations/responses are listed in the following table:

Table 6A: WCAG 2.0 Review		
NOTE: The WCAG 2.0 examination included 93 requirements.		
Discrepancy	Vendor Mitigation/Response	
Guideline 2.1 - Keyboard Accessible: Make	KNOWiNK can provide a physical Bluetooth keyboard for purchase by the county that can be	
all functionality available from a keyboard.	used with PollPad to meet this requirement.	
2.1.1 Keyboard (Level A) - All page		
functionality is available using the	KNOWiNK can provide a physical Bluetooth	
keyboard, unless the functionality cannot be	keyboard for purchase to the county that can be	
accomplished in any known way using a	used with PollPad to meet this requirement.	
keyboard (e.g., free hand drawing).		
2.1.3 Keyboard (No Exception) (Level	KNOWiNK can provide a physical Bluetooth	
AAA) - All page functionality is available	keyboard for purchase by the county that can be	
using the keyboard.	used with PollPad to meet this requirement.	

Table 6B: Section 508 Review		
Note: The Section 508 examination included 50 requirements.		
Discrepancy	Vendor Mitigation/Response	
§ 1194.21 Software applications and	Using assistive technologies such as VoiceOver	
operating systems - (1) When electronic	in conjunction with an optional Bluetooth	
forms are used, the form shall allow people	keyboard, end users can utilize built-in assistive	
using assistive technology to access the	technologies to meet this requirement. Further	
information, field elements, and	optimizations can be made to the application in	

functionality required for completion and submission of the form, including all directions and cues.	a future release with administrative approval to more fully meet these requirements. Features such as VoiceOver must be enabled and activated by the jurisdiction. An external Bluetooth keyboard would have to be purchased by the county.
§ 1194.23 Telecommunications Products - (k) Products which have mechanically operated controls or keys, shall comply with the following: (1) Controls and keys shall be tactilely discernible without activating the controls or keys.	The built-in VoiceOver screen reader provides audio and visual feedback for touchscreen controls without requiring the user to activate them. The Home, Sleep/Wake, and Volume rocker switch are also tactilely discernible. The Volume rocker switch must be pressed to determine the current volume setting. Features such as VoiceOver must be enabled and activated by the jurisdiction.
§ 1194.25 Self-contained, closed Products - (c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).	The built-in VoiceOver screen reader provides audio and visual feedback for touchscreen controls. Also, VoiceOver can be controlled via key commands entered on a standard Bluetooth keyboard. The iPad also includes a number of Accessibility features to support motor control; AssistiveTouch which provides an alternative set of screen gestures for users who may have difficulty with touch gestures and requires only a single finger or apparatus to operate, Switch Control which provides an alternate method for navigating and making onscreen selections, and Touch Accommodations which provides a means to adjust how the screen responds to touches, such as controlling how long you touch before it's recognized or whether it ignores repeated touches.
§ 1194.26 Desktop and portable Computers - (b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).	Using assistive technologies such as VoiceOver and Switch Control in conjunction with an optional Bluetooth keyboard, end users can utilize assistive technologies to meet this requirement. Further optimizations can be made to the application in a future release with administrative approval to more fully meet these requirements. Features such as VoiceOver and Switch Control must be enabled and activated by the jurisdiction. An external Bluetooth keyboard would have to be purchased by the county.
§ 1194.31 Functional performance Criteria - (a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for assistive technology used by people who are	iPad includes a built-in screen reader called VoiceOver that enables iPad to be used by those who are blind or visually impaired. Also, VoiceOver can be controlled via key commands entered on a standard Bluetooth keyboard.

blind or visually impaired shall be provided.	Features such as VoiceOver must be enabled
	and activated by the jurisdiction.

IV. COMPLIANCE WITH STATE LAWS AND REGULATIONS

Two (2) sections of the California Code of Regulations, sections 20150 and 20158, describe in detail the requirements any electronic poll book system must meet in order to be approved for use in California elections. These sections are described in detail and analyzed for compliance below.

1) §20150(a)(1): An electronic poll book shall contain, at a minimum, all of the following voter registration data: Name, Address, District/Precinct, Party preference, Voter status, Whether or not the voter has been issued a vote by mail ballot, Whether or not the vote by mail ballot has been recorded as accepted by the elections official, and Whether or not the voter's identification must be verified.

The system meets this requirement.

2) §20150(a)(2): An electronic poll book shall not contain the following voter registration data: California driver's license number, and Social Security Number or portion thereof.

The system meets this requirement.

3) §20158(a): The electronic poll book shall not be connected to a voting system at any time.

The system meets this requirement.

4) §20158(b): The electronic poll book shall demonstrate that it accurately processes all activity as prescribed in the vendor's application packet.

The system meets this requirement.

5) §20158(c): The electronic poll book shall be capable of operating for a period of at least two hours on backup power, such that no data is lost or corrupted nor normal operations interrupted. When backup power is exhausted, the electronic poll book shall retain the contents of all memories intact.

The system meets this requirement.

6) §20158(d): The electronic poll book shall be compatible with: all voter registration election management systems used in the State of California, including any software system (middle ware) used to prepare the list of voters for the equipment, and any hardware attached to the electronic poll book (e.g. bar code scanners, signature capture devices, transport media, printers, etc.).

The system meets this requirement.

7) §20158(e): An electronic poll book shall contain all of the following voter registration data: Name, Address, District/Precinct, Party preference, Voter status, Whether or not the voter has been issued a vote by mail ballot, Whether or not the vote by mail ballot has been recorded as accepted by the elections official, and Whether or not the voter's

identification must be verified.

The system meets this requirement.

8) §20158(f): The electronic poll book shall encrypt all voter registration data at rest and in transit, utilizing a minimum of Advanced Encryption Standard (AES) 256-bit data encryption, based on recognized industry standards.

The system meets this requirement.

9) §20158(g): The electronic poll book shall provide reliable transmission of voter registration and election information.

The system meets this requirement.

10) §20158(h): The electronic poll book shall have the capability to store a local version of the electronic list of registered voters to serve as a backup.

The system meets this requirement.

11) §20158(i): The electronic poll book shall produce a list of audit records that reflect all actions of the system, including in-process audit records that display all transactions. Such audit records shall be able to be exported in non-proprietary, human readable format.

The system meets this requirement.

12) §20158(j): The electronic poll book shall enable a poll worker to easily verify that the electronic poll book: has been set up correctly, is working correctly so as to verify the eligibility of the voter, is correctly recording that a voter has voted, and has been shut down correctly.

The system meets this requirement.

13) §20158(k): After the voter has been provided with a ballot, the electronic poll book shall permit a poll worker to enter information indicating that the voter has voted at the election. The electronic poll book shall have the capability to transmit this information to every other electronic poll book in the county utilizing the same list of registered voters.

The system meets this requirement.

14) §20158(1): The electronic poll book shall permit voter activity to be accurately uploaded into the county's voter registration election management system. **The system meets this requirement.**

15) §20158(m): During an interruption in network connectivity of an electronic poll book, all voter activity shall be captured and the electronic poll book shall have the capacity to transmit that voter activity upon connectivity being restored.

The system meets this requirement.

16) §20158(n): If the electronic poll book uses an electronic signature capture device, the device shall: produce a clear image of the electronic signature capable of verification, and retain and identify the signature of the voter

The system meets this requirement.

17) §20158(o): The electronic poll book shall have the capacity to transmit all information generated by the voter or poll worker as part of the process of receiving a ballot, including the time and date stamp indicating when the voter voted, and the electronic signature of the voter, where applicable, to the county's voter registration election management system.

The system meets this requirement.

- 18) §20158 (p): The Secretary of State recommends electronic poll books not be enabled or installed with any technologies delineated in the Institute of Electrical and Electronics Engineers' (IEEE) 802.11 wireless local area network (LAN) standards. However, should an electronic poll book be enabled or installed with a wireless technology, the following shall be utilized: a minimum of 256-bit data encryption, a minimum of Wireless Protected Access (WPA) 2 security enabled, compliance with Payment Card Industry Data Security Standards (PCI DSS) version 3.2, a dedicated wireless access point (WAP) or connection utilized only by county employees or elections officials and void of public or guest access, and devices equipped with one or more of the following: biometric authentication, multi-factor authentication, compliance with current PCI DSS version 3.2 password requirements, or remote wipe technology set to automatically clear a device upon 8 eight failed login attempts. The system meets this requirement.
- 19) §20158 (q): Jurisdictions utilizing a wide area network (WAN) to transmit voter registration data from an electronic poll book to a centralized location shall utilize one of the following: a dedicated leased line, a hardware virtual private network (VPN), or a dedicated cellular connection void of public or guest access. **The system meets this requirement.**
- 20) §20158 (r): The electronic poll book shall be reviewed for accessibility. **The system meets this requirement.**

V. CONCLUSION

The KNOWiNK PollPad Plus, Version 1.0, in the configuration tested and documented by the California Secretary of State, is compliant with all California laws.